

FIG. 1A

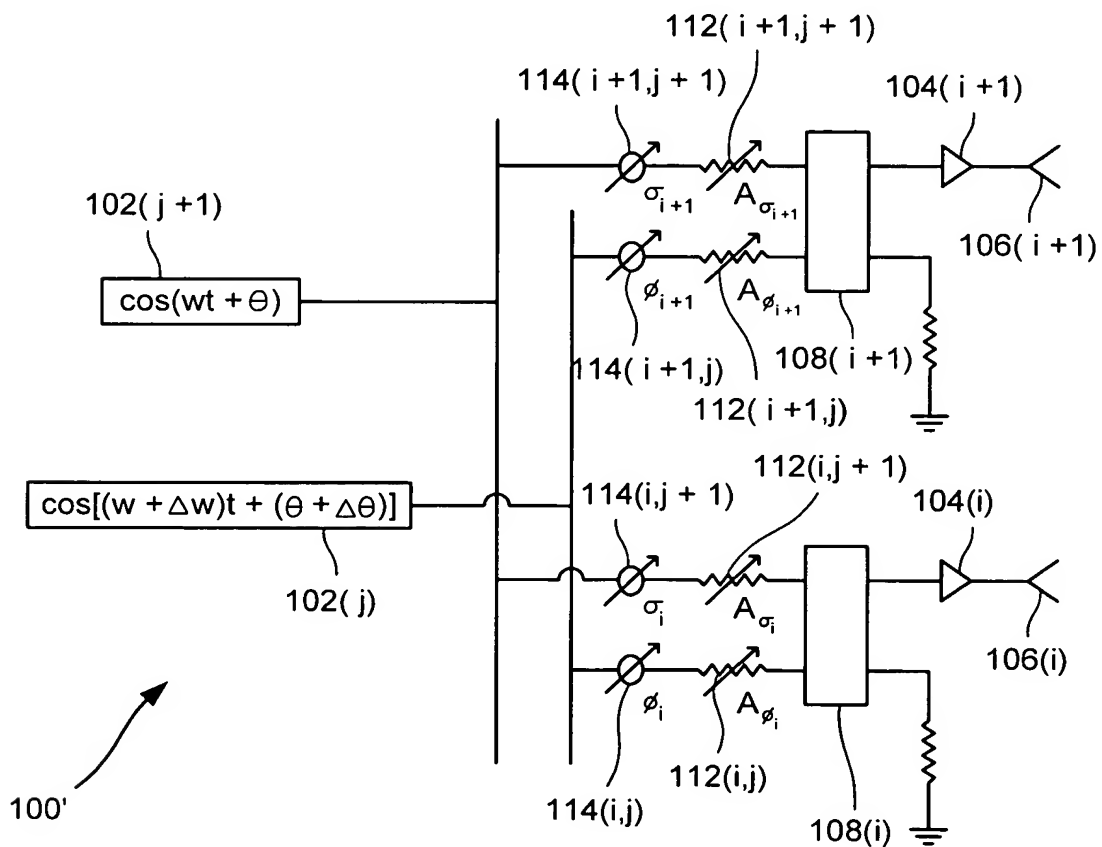


FIG. 1B



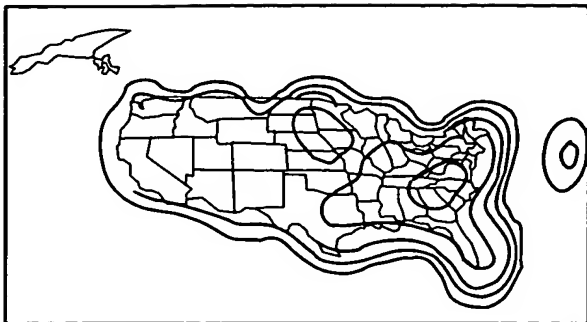


FIG. 2A

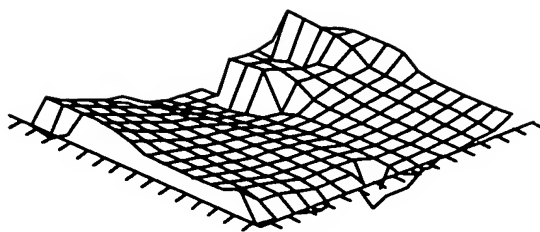


FIG. 2B

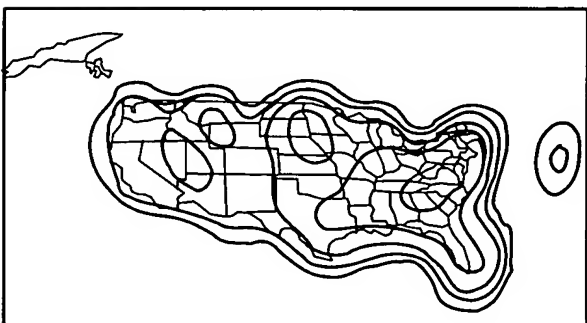


FIG. 2C

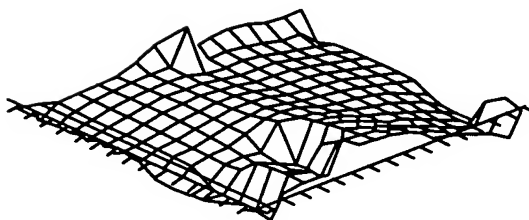


FIG. 2D

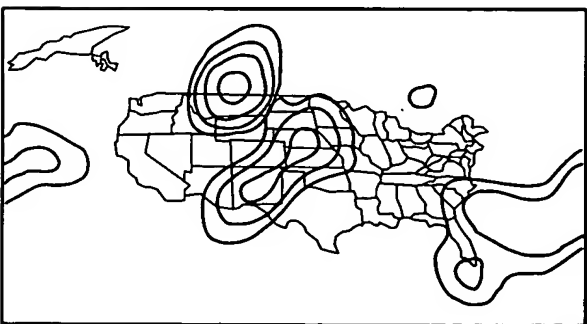


FIG. 2E

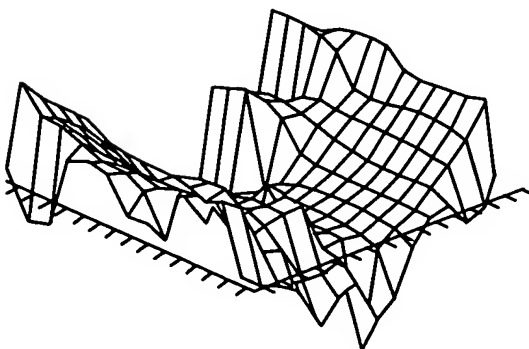


FIG. 2F



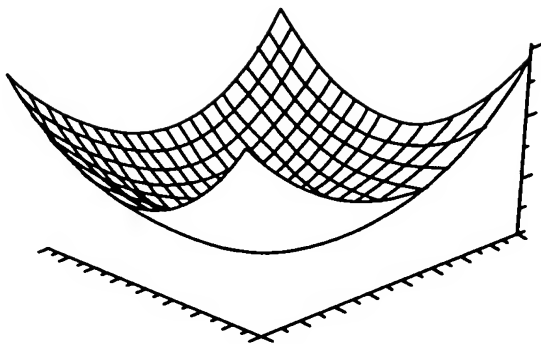


FIG. 3A

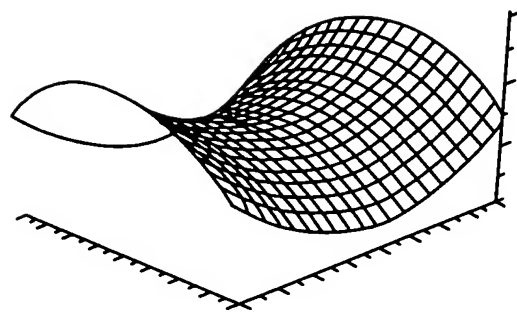


FIG. 3D

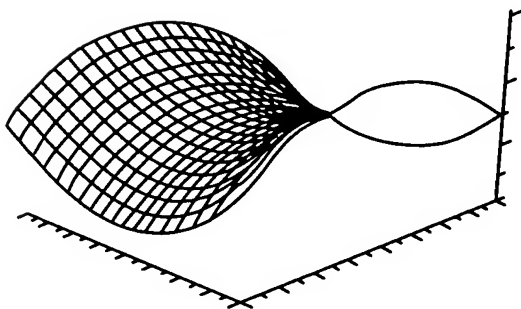


FIG. 3B

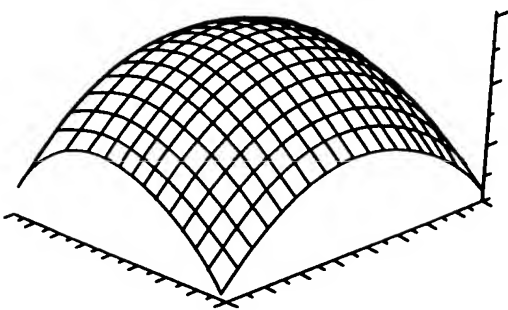


FIG. 3C

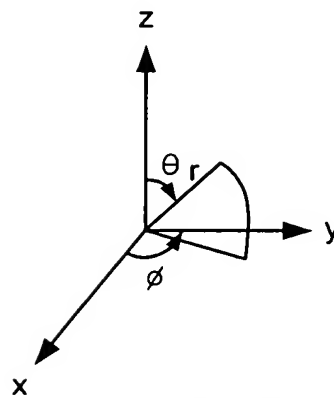


FIG. 3E



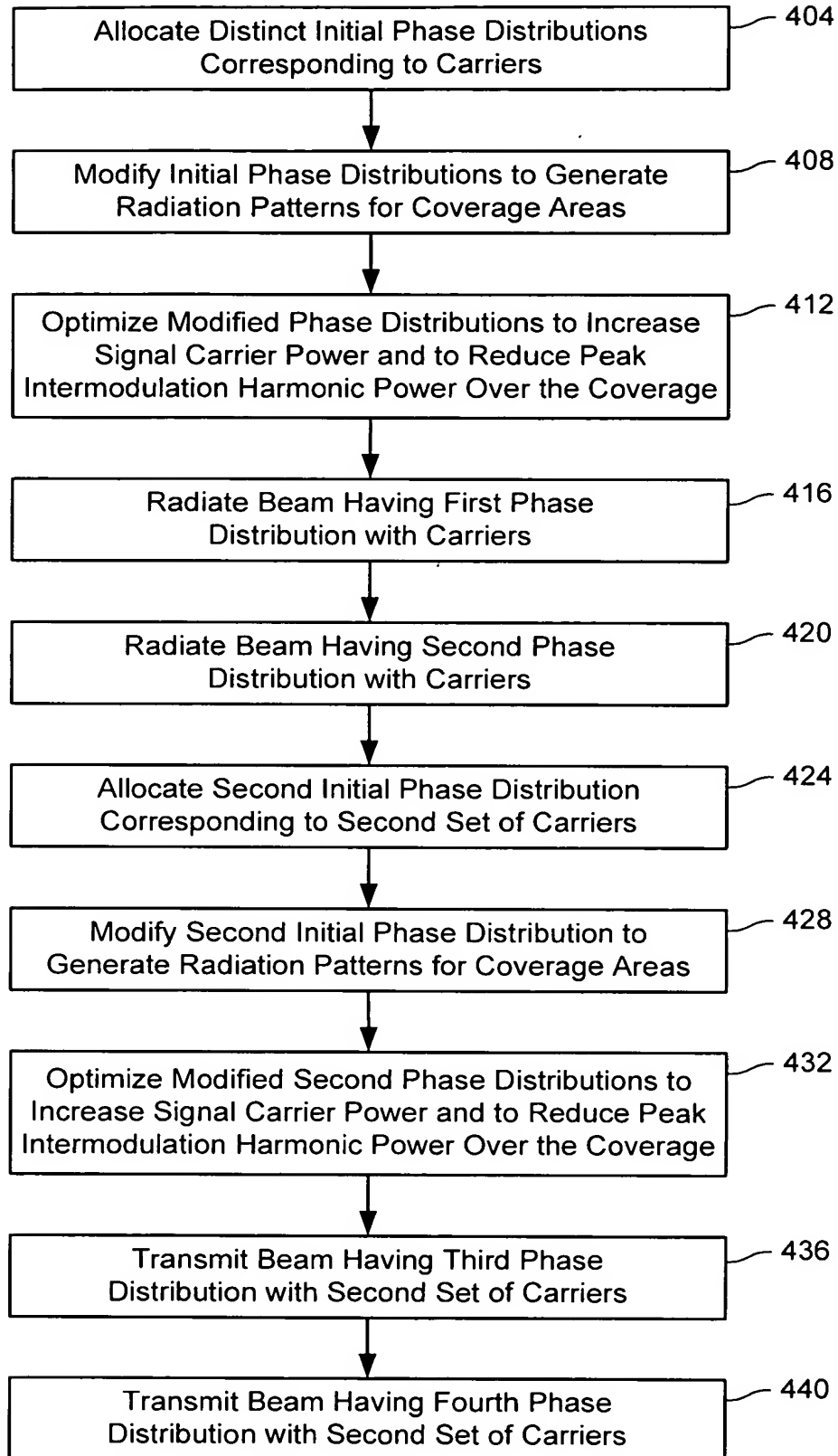


FIG. 4

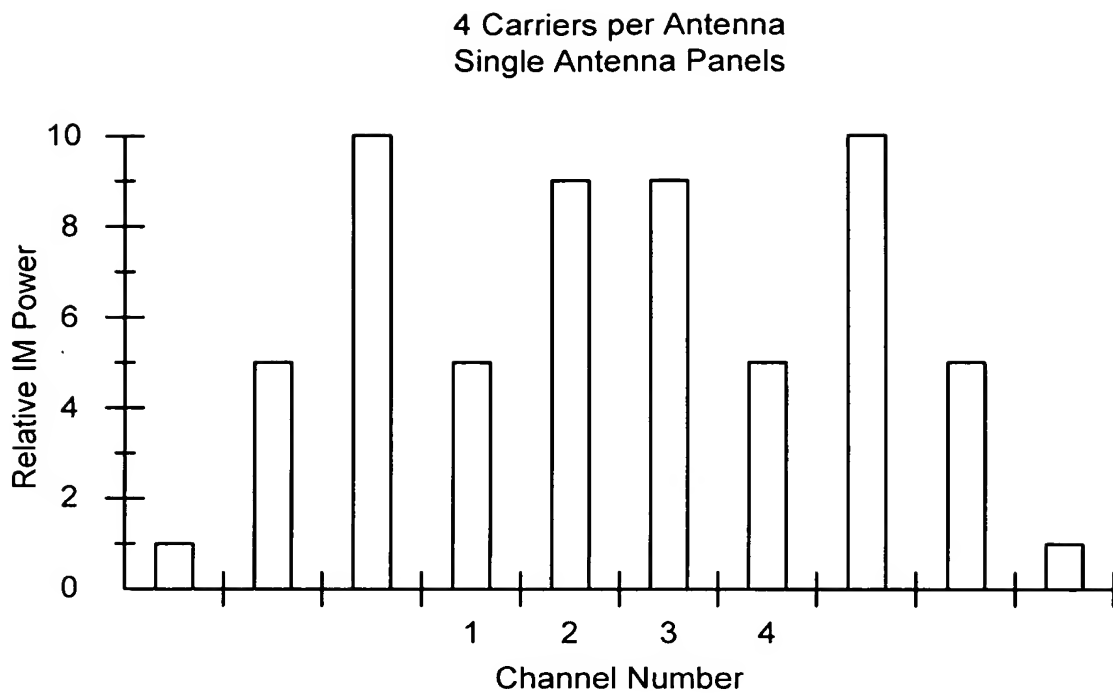


FIG. 5A

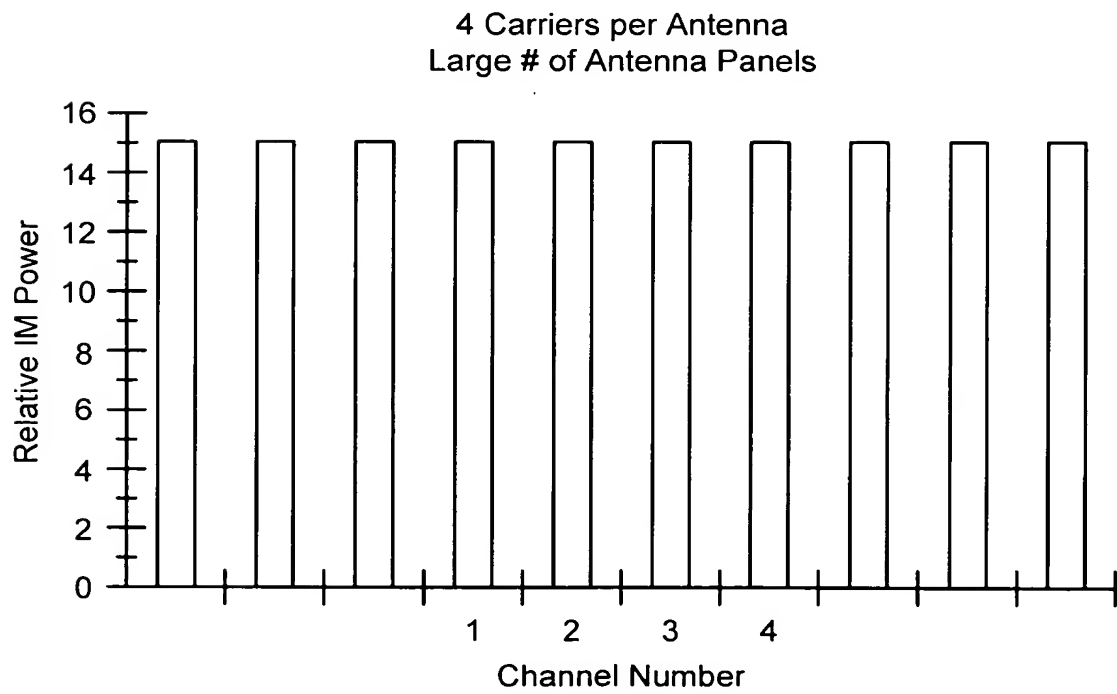


FIG. 5B





Single Carrier Characteristics

Solid: Measured Dashed: Predicted

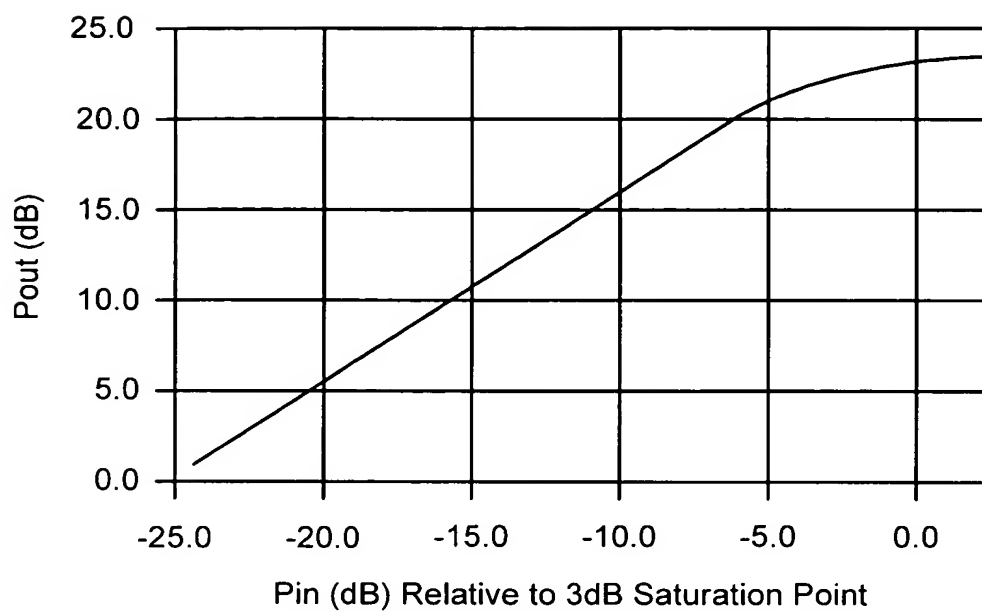


FIG. 6A

Two Carrier Characteristics

Solid: Measured Dashed: Predicted

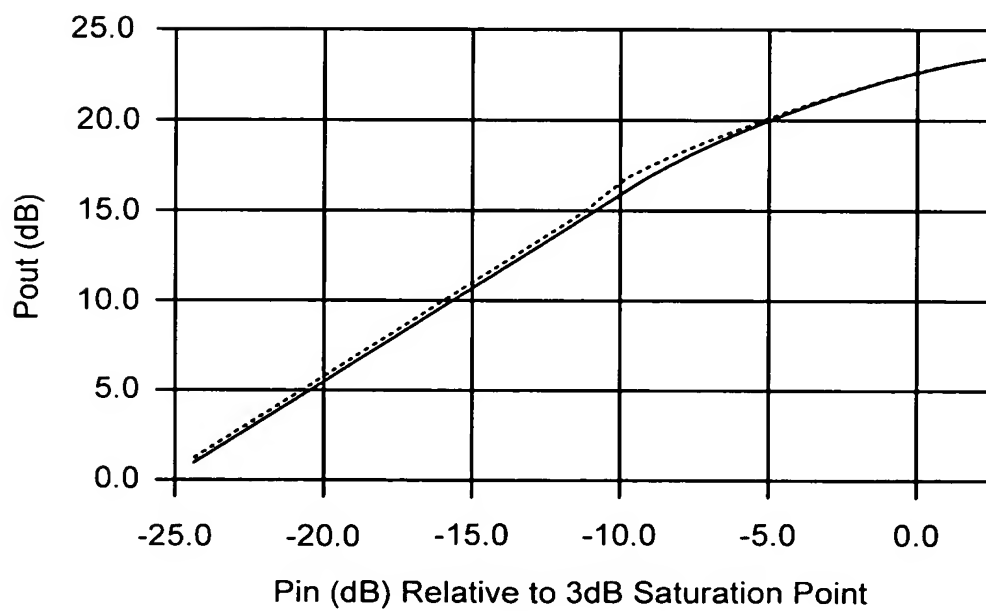


FIG. 6B





Single-Carrier Efficiency

$$\text{Eff} = 100 \cdot (\text{Pout} - \text{Pin}) / \text{DC}, \text{DC} = \text{ADC} + \text{BDC} \cdot 10 \cdot \text{LOG10}(\text{PIN})$$

Solid: Measured Dashed: Predicted

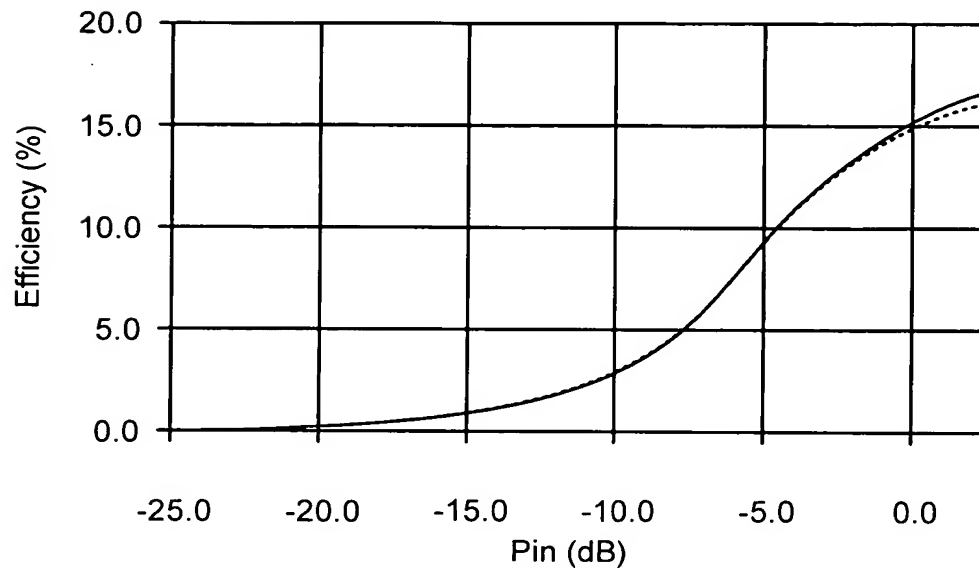


FIG. 6C

Two-Carrier Efficiency

Predicted by the Single Tone Time Average Approach

Solid: Measured Dashed: Predicted

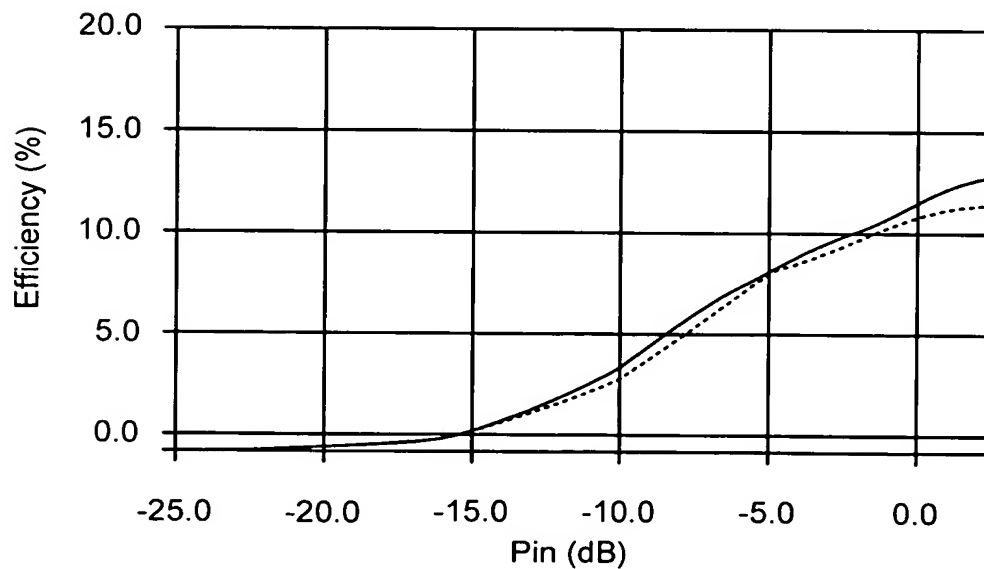


FIG. 6D



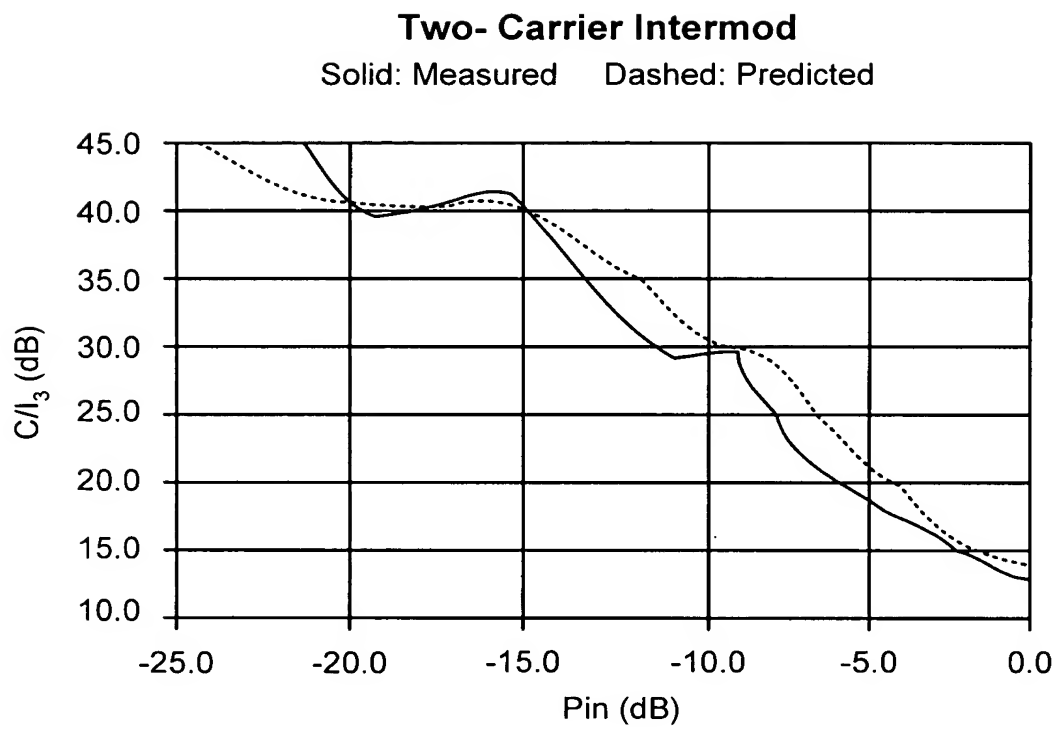


FIG. 6E



Ku-Band

Active array, 16x16 elem. array size = 3.0 λ
EIRP-Optimized Pattern with Paraboloidal-Type Phase
Relative Pattern

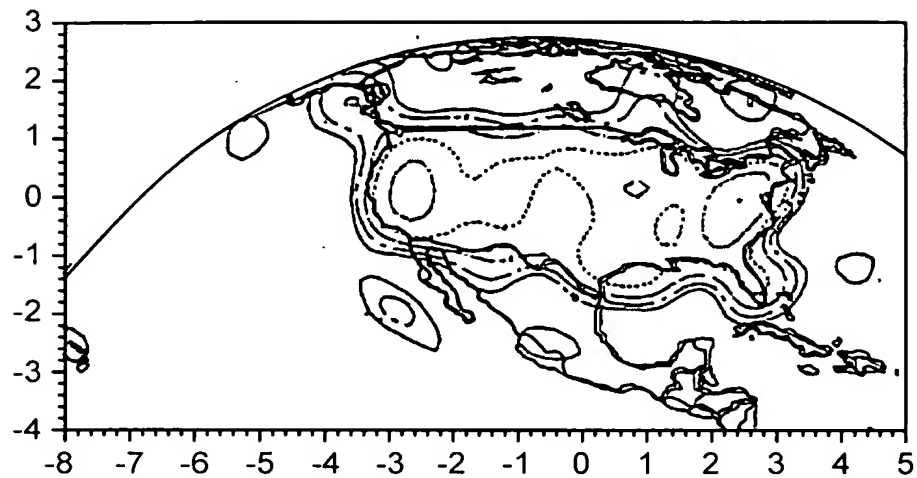


FIG. 7A

Ku-Band

Active array, 16x16 elem. array size = 3.0 λ
EIRP-Optimized Pattern with Saddle-Type Phase
Relative Pattern

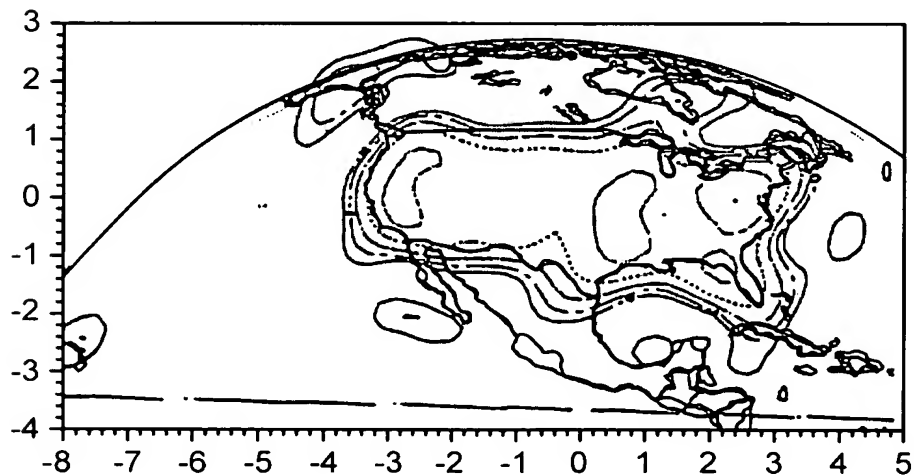
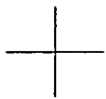


FIG. 7B





Phase-Only Optimization

Active array, 16x16 elements, El. size = 3.0 wavelength

Paraboloidal-Type Phase Distribution

Contour Levels: -200, -150, -100, -50, 0, 50, 100, 150, 200dB

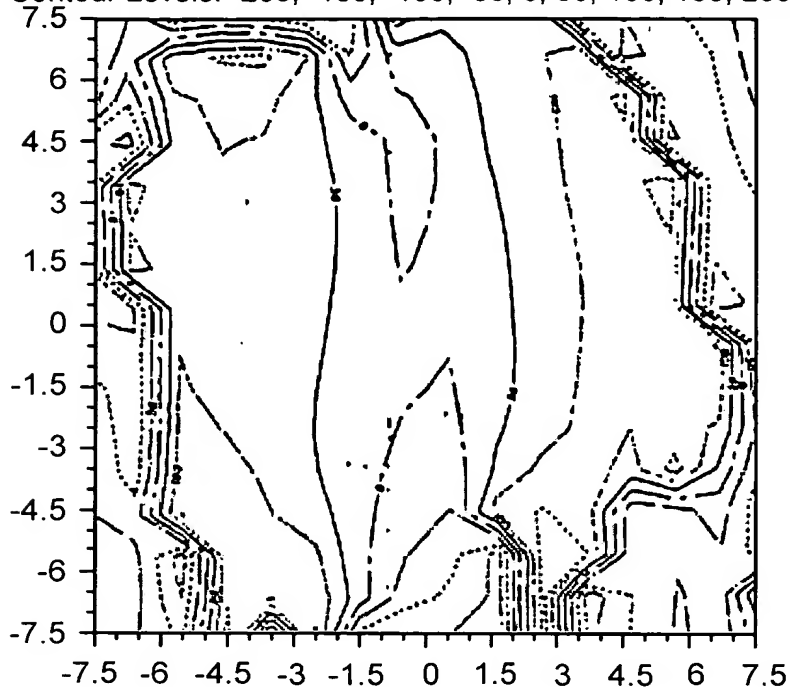


FIG. 8A

Phase-Only Optimization

Active array, 16x16 elements, El. size = 3.0 wavelength

Saddle-Type Phase Distribution

Contour Levels: -200, -150, -100, -50, 0, 50, 100, 150, 200dB

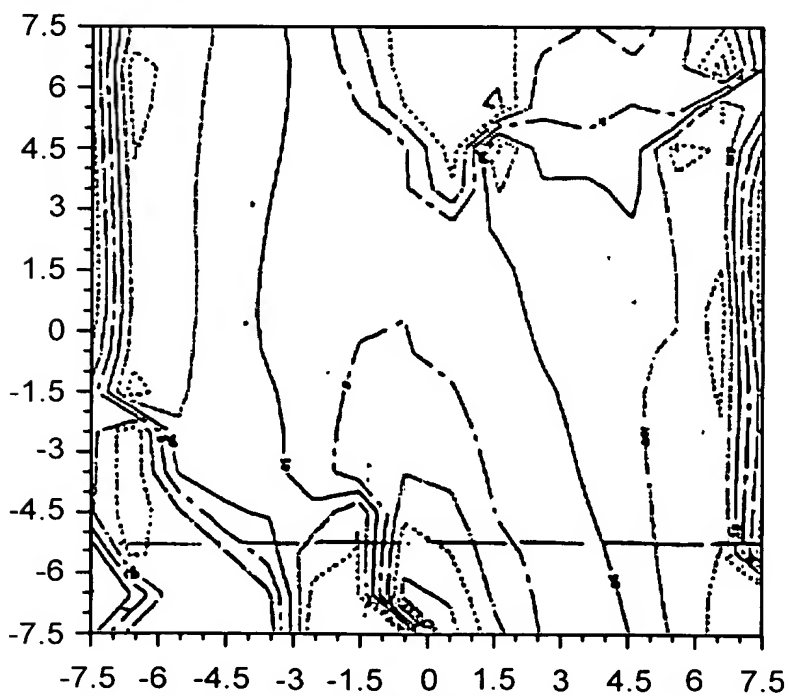


FIG. 8B





Ku-Band

Active array, 16x16 elem. elem size = 3.0 lambda
EIRP-Optimized Pattern with Paraboloidal-Type Phase
C/13 Pattern, Minimum = 11.5dB

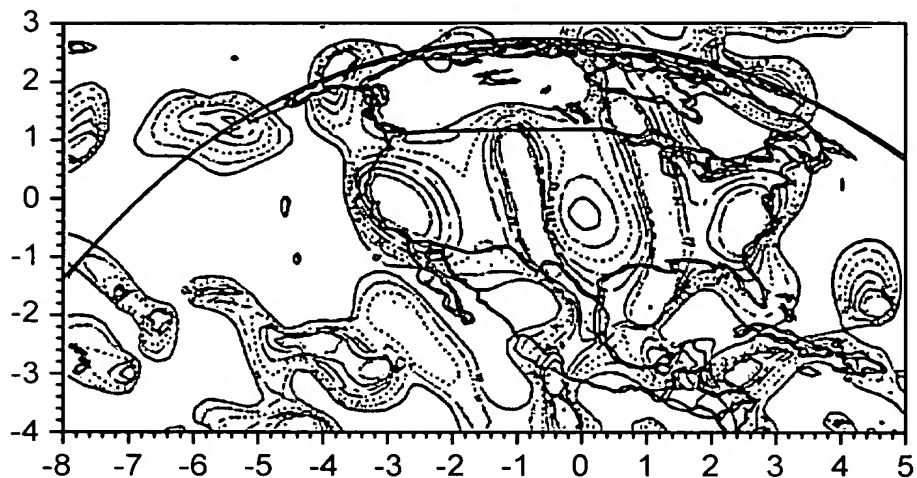


FIG. 9A

Ku-Band

Active array, 16x16 elem. elem size = 3.0 lambda
EIRP-Optimized Pattern with Saddle-Type Phase
C/13 Pattern, Minimum = 12.0dB

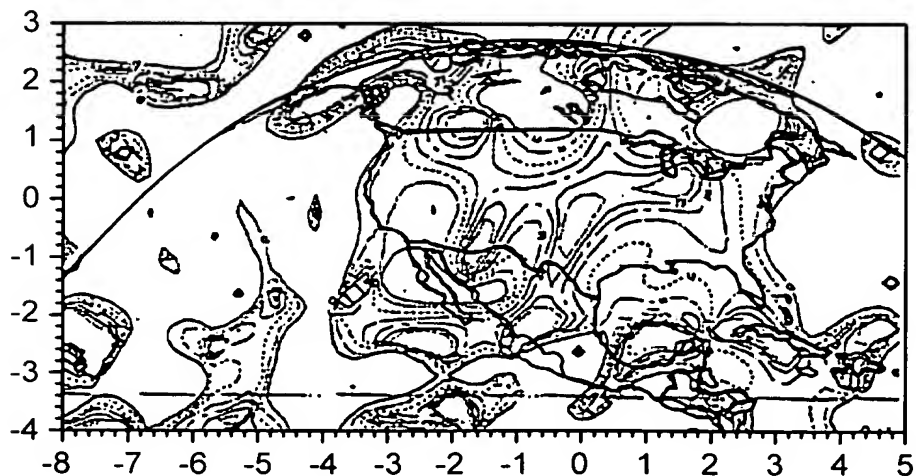


FIG. 9B





Ku-Band

Active array, 16x16 elem. array size = 3.0 λ
EIRP-Optimized Pattern with Saddle-Type Phase
Relative Pattern, EIRP Reduction due to IM-Opi = 0.17 dB

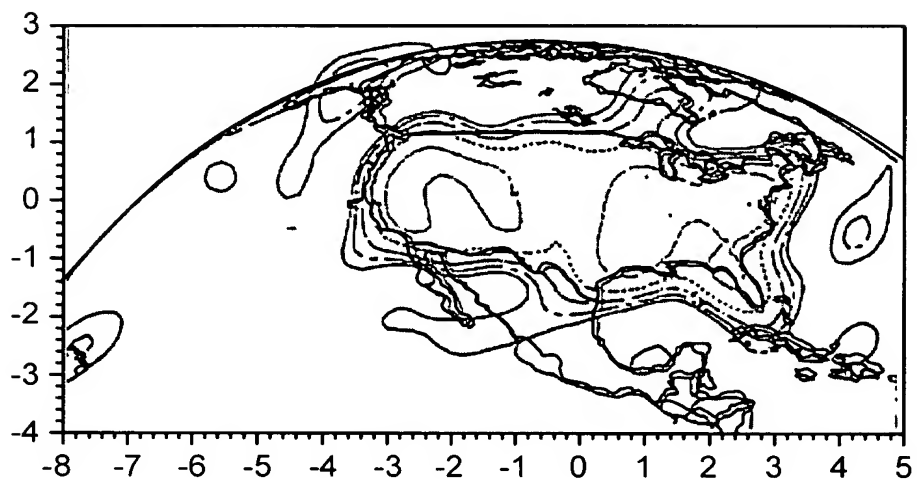


FIG. 10





Ku-Band

Active array, 16x16 elem. elem size = 3.0 lambda
EIRP & IM Optimized Pattern with Saddle-Type Phase
C/I₃ Pattern, Minimum = 23.4dB, EIRP Reduction = 0.17db

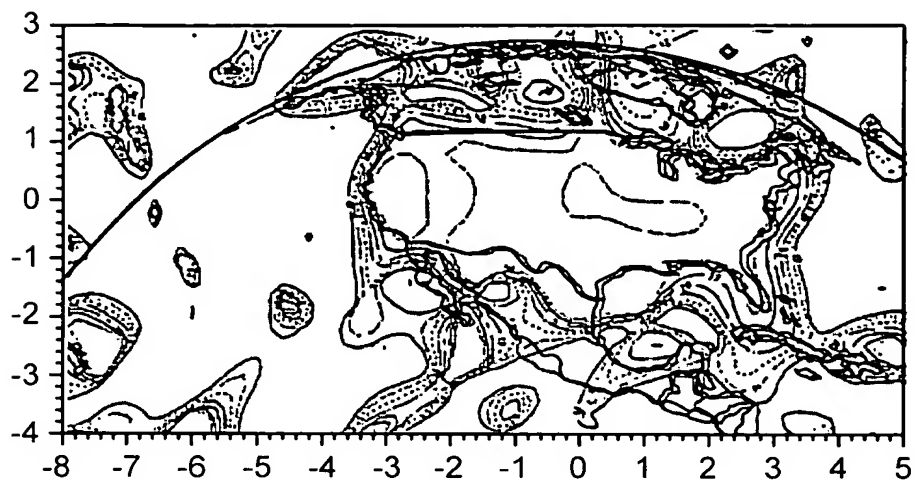


FIG. 11A

Ku-Band

Active array, 16x16 elem. elem size = 3.0 lambda
EIRP & IM Optimized Pattern with Saddle-Type Phase
C/I₅ Pattern, Minimum = 27.4dB, EIRP Reduction = 0.17db

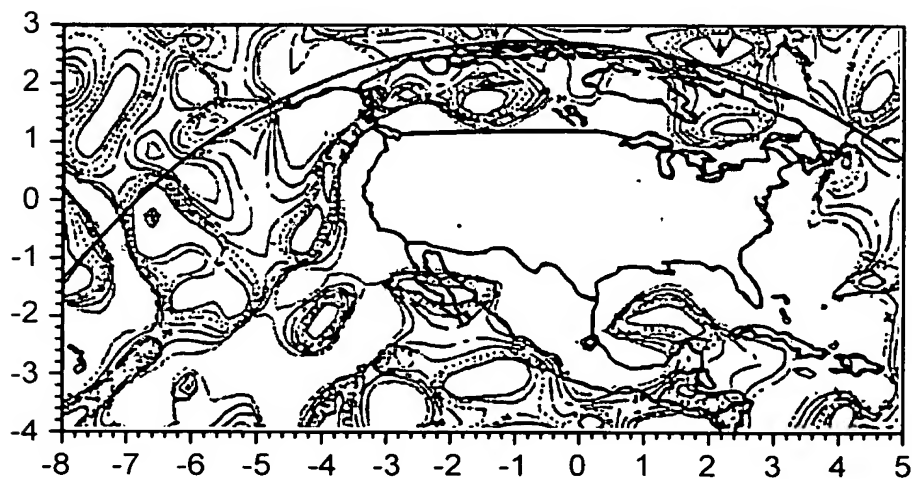


FIG. 11B



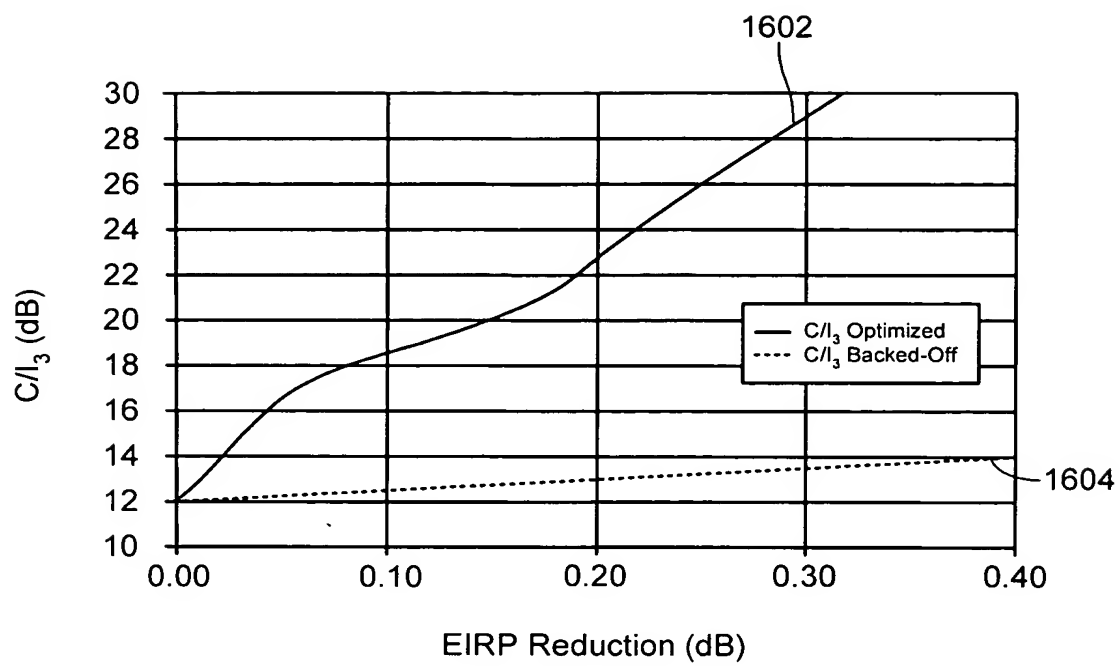


FIG. 12

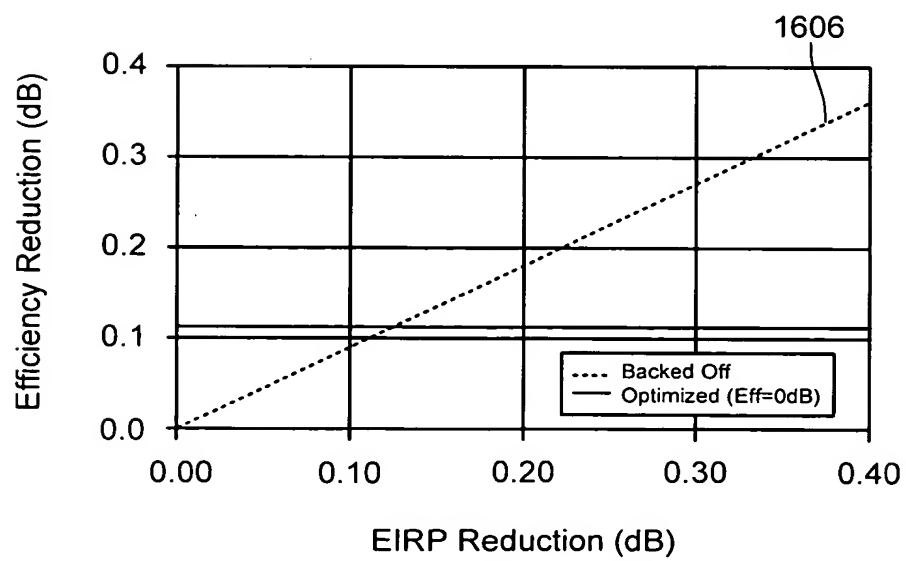


FIG. 13

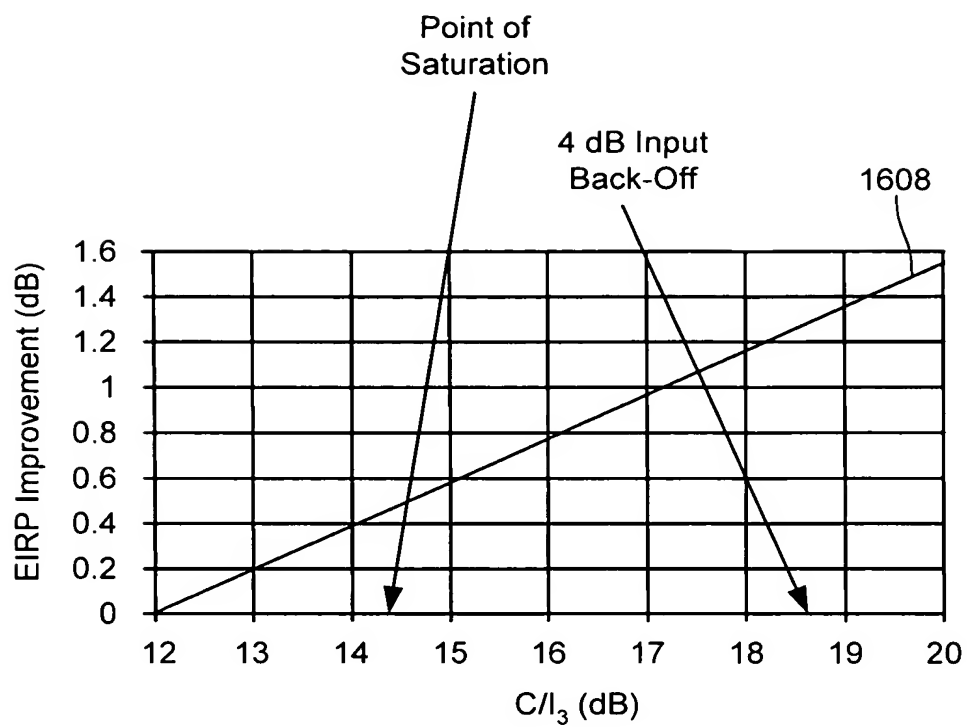


FIG. 14

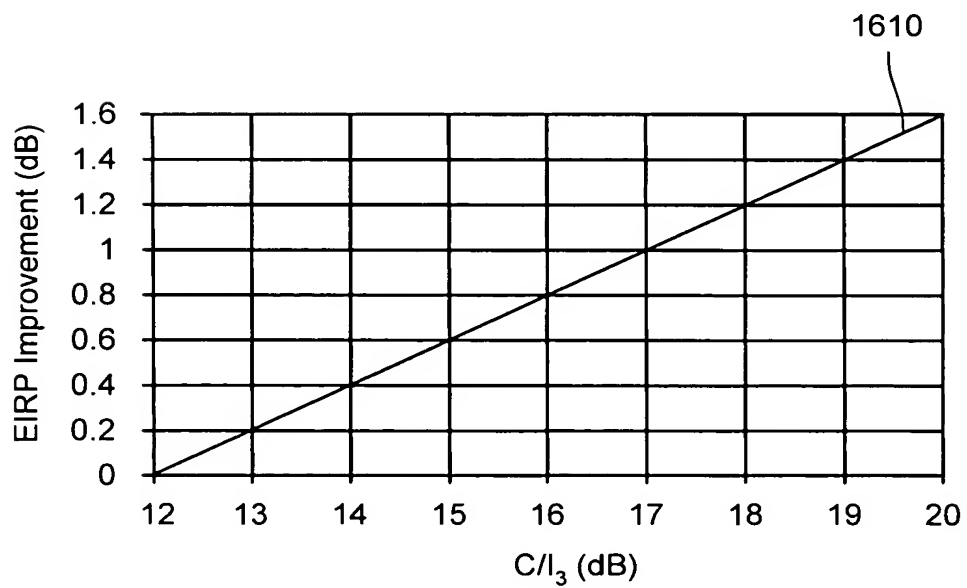


FIG. 15

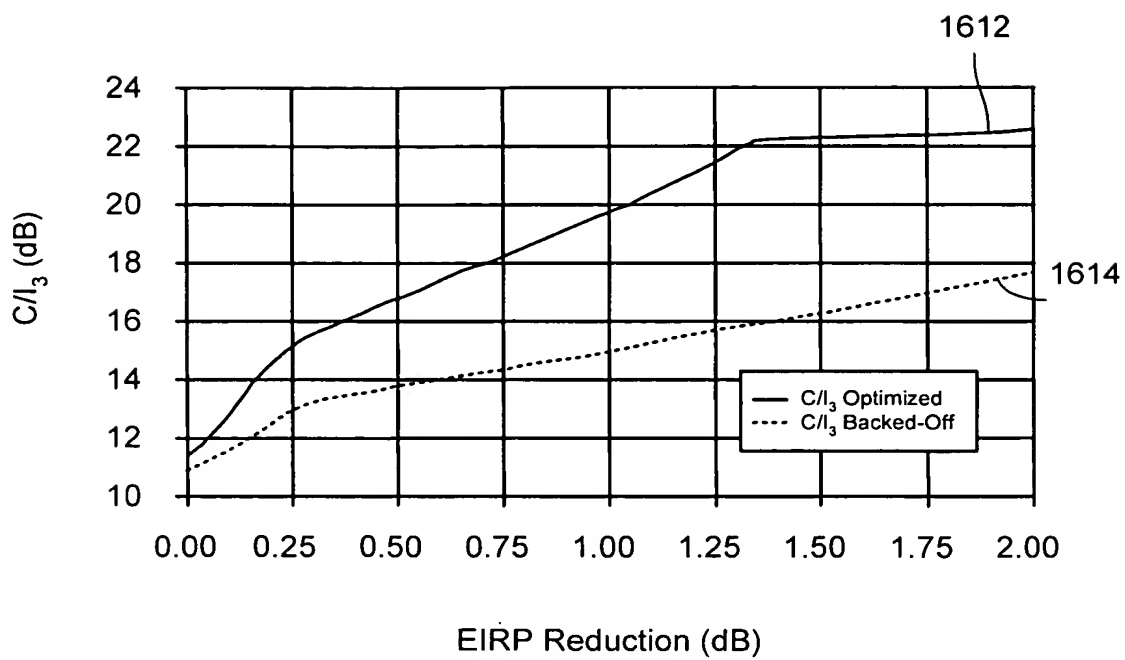


FIG. 16

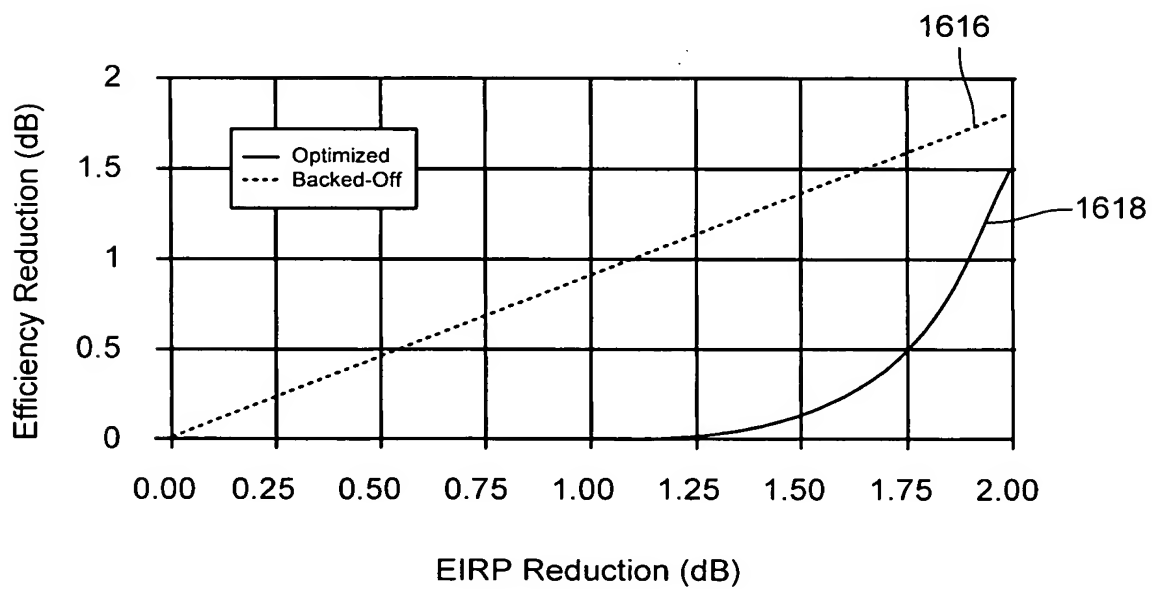


FIG. 17

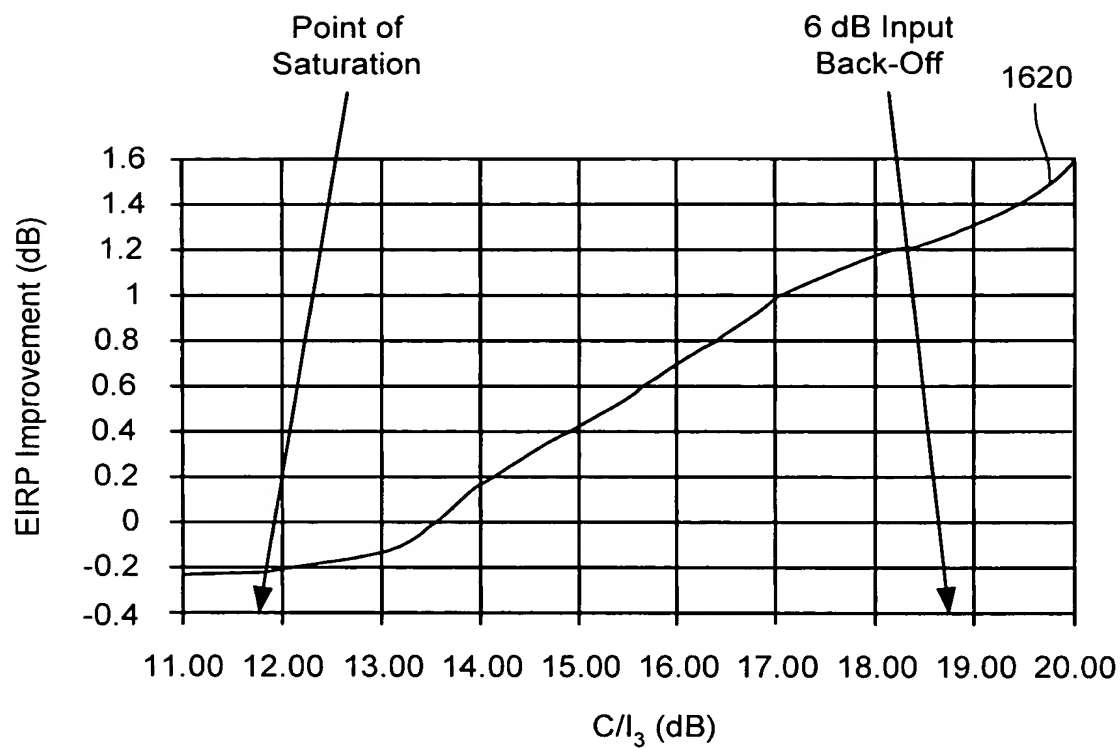


FIG. 18

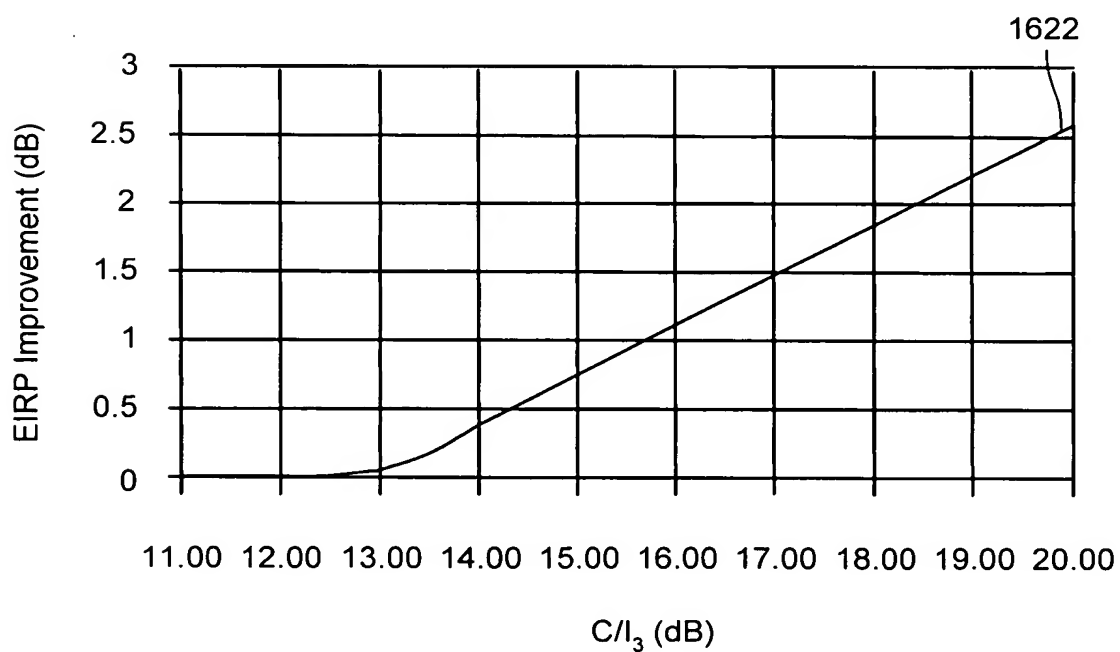


FIG. 19